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June 1963

PHOTOGRAPHIC INTERPRETATION

PROBABLE MISSILE PRODUCTION PLANTS AND PROPULSION TEST FACILITIES AT DNEPROPETROVSK, USSR



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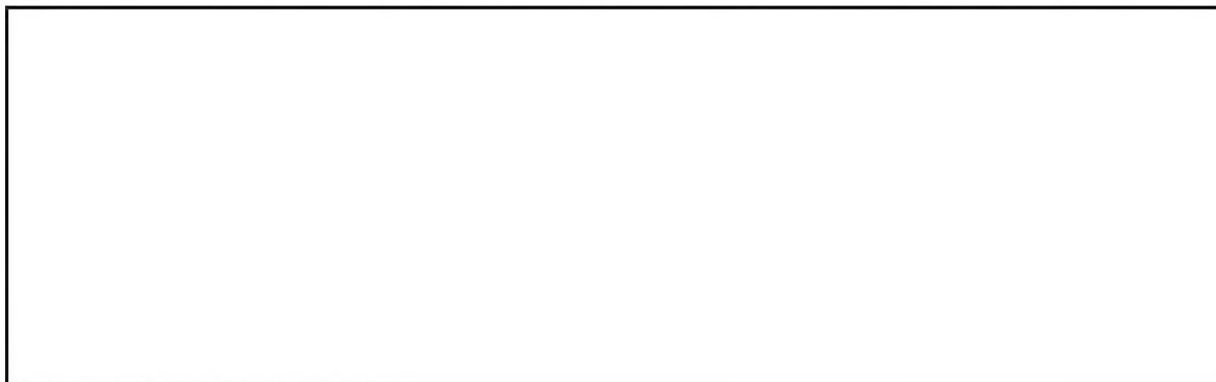
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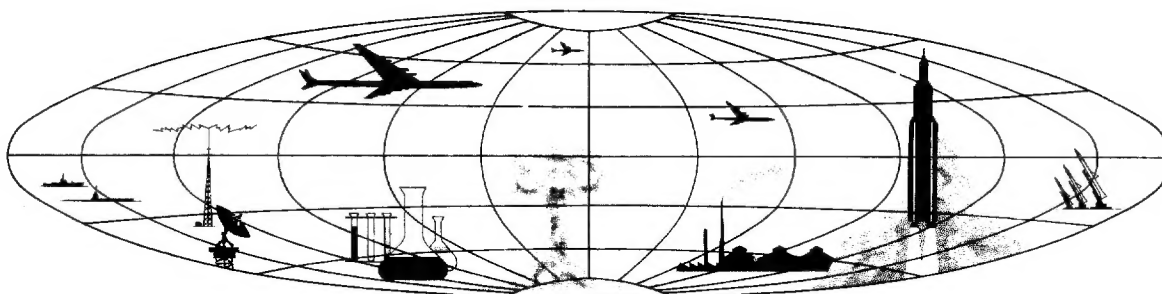
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PHOTOGRAPHIC INTERPRETATION REPORT

PROBABLE MISSILE PRODUCTION PLANTS
AND PROPULSION TEST FACILITIES
AT DNEPROPETROVSK, USSR

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INTRODUCTION

The probable missile production plants and propulsion test facilities (48-26N 34-59E), covered by [redacted] photography of [redacted] and [redacted] photography of [redacted] include a Main Plant Area, New Plant Area, and Static Test Area located on the

southern edge of the city of Dnepropetrovsk (Figure 1). The Main Plant Area, commonly known as the DAZ Plant, was constructed between 1945 and 1949 to produce ZIS-150 trucks but has never had an important role in the motor vehicle industry. Photographic interpretation and collateral information indicate that production is diversified. Since 1951 the plant has been engaged in the production of rocket engines, and probably complete missiles; agricultural tractors and household refrigerators are also probably produced at the plant.

The Main Plant Area, New Plant Area, and Static Test Area, occupying a total area of approximately 970 acres, are the major components of the installation (Figure 2). Total roof cover of the major buildings in the three areas is about 7 million square feet, making it the largest installation of this type in the USSR. The plant and testing areas are separately secured by fences or walls, and interior portions of each area are also separately secured. All three areas have connections to the general road and rail networks serving Dnepropetrovsk. Air support is provided by the Dnepropetrovsk/Valoshkoye Airfield, 6 nautical miles (nm) to the southeast. Electric power is supplied by the Dnepropetrovsk Heat and Power Plant (TETS Vehicle), connected to the Dnepr-Donets power network. Water is taken from the Dnepr River, and is also probably recycled from a reservoir south of the installation for flushing purposes in the Static Test Area. Housing is restricted generally to that available in Dnepropetrovsk and its environs.



FIGURE 1. LOCATION MAP.

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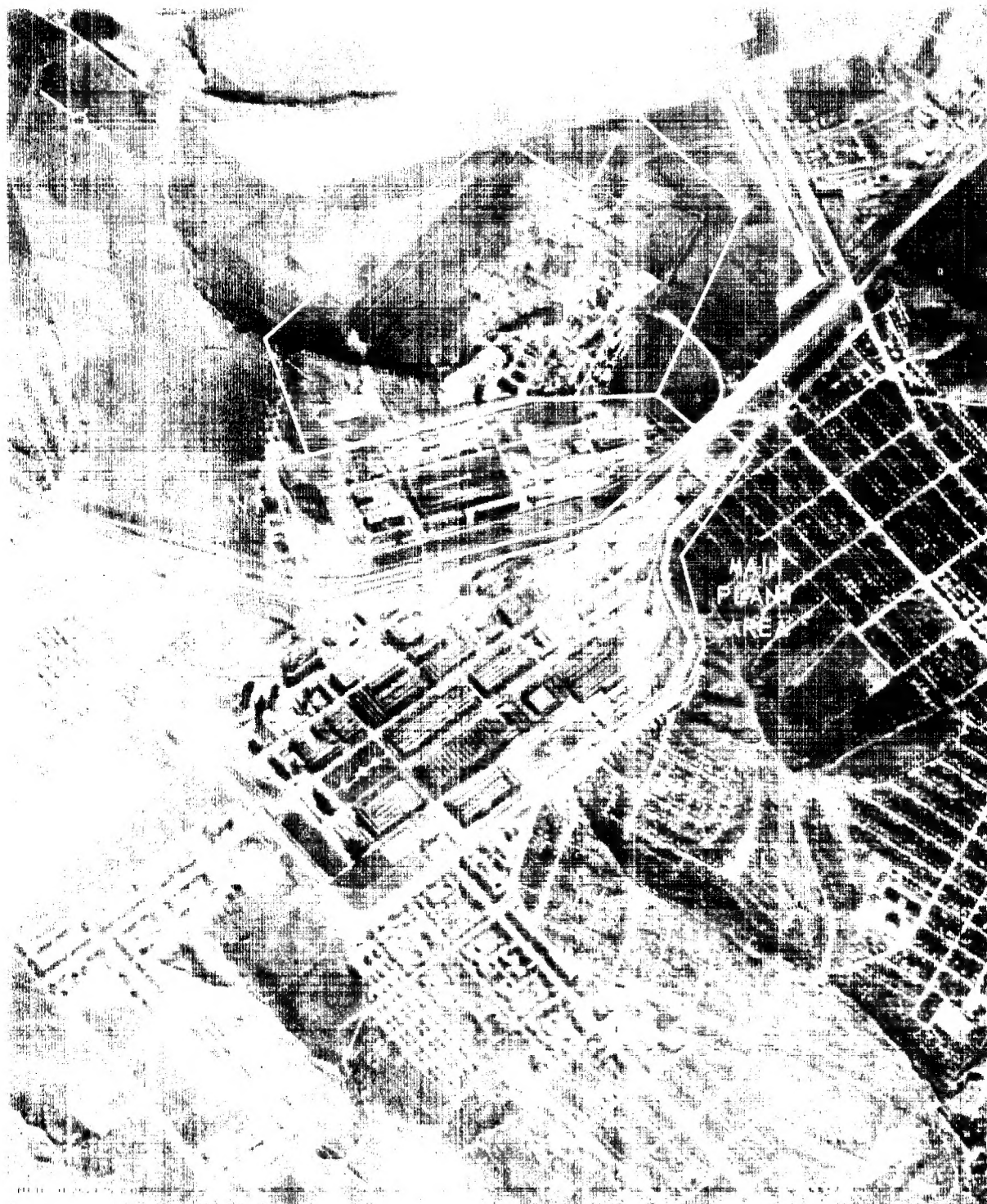


FIGURE 2 MAJOR AREAS COMPONENTS OF THE PROBABLE MISSILE PRODUCTION AND PROPULSION TEST FACILITIES

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MAIN PLANT AREA

The Main Plant Area (Figure 3), designated as Plant Post Box 186, has an area of approximately 545 acres and its major buildings (Table 1) have a total roof cover of about 5,253,800 square feet. No rail-through buildings can be identified in the area. A possible power plant is the largest of six buildings located in a fenced area measuring approximately 1,090 by 420 feet at the southeast corner of the Main Plant Area; the power plant may be rail served, but positive identification of a spur into the area cannot be made due to the small scale of the photography. A second internal secured area, measuring approximately 490 by 260 feet and containing three small sheds, is located at the western extremity of the Main Plant Area; the sheds are served by

two single-track rail spurs which connect with a holding yard nearby. The dimensions and functions of numerous other small buildings within the Main Plant Area cannot be determined from available photography or collateral information.


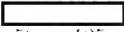
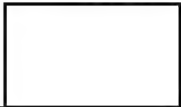




Other significant facilities within or associated with the Main Plant Area (Figure 3, Items A--1, respectively) include a possible tractor park, a fire station, a personnel office, the Trust 17 Main Office, a car park, two horizontal cylindrical tanks, three cooling towers, a probable fuel yard, and a sports arena. A large garage (Figure 3), measuring 385 by 295 feet, is situated in a fenced area outside the southeast extremity of the Main Plant Area.

Table 1. Major Buildings, Main Plant Area

Item, Figure 3	Description	Dimensions (ft) (approx)	Roof Cover (sq ft) (approx)
1	Prob storage bldgs (2)	110 x 110 140 x 80	12,100 11,200
2	Prob storage bldg	280 x 70	19,600
3	Prob warehouses (5)	155 x 35	27,125
4	Prob storage bldg	240 x 35	8,400
5	Prob storage bldg	280 x 70	19,600
6	Prob storage bldg	275 x 105	28,875
7	Prob storage bldg	600 x 80	48,000
8	Final assembly & processing bldg, irregular shape	785 x 600	471,000
9	Prob storage bldg	280 x 55	15,400
10	Assembly bldgs (2)	310 x 70 125 x 60	21,700 7,500
11	Poss engineering bldg, 3 wings	245 x 80 295 x 60 250 x 40 250 x 60	19,600 17,700 10,000 15,000
12	Unidentified bldgs (2)	435 x 315 210 x 125	137,025 26,250
13	Assembly bldg	435 x 390	169,650
14	Assembly bldg, L-shaped	350 x 210 210 x 140	73,500 29,400

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Table 1. (Continued)

Item, Figure 2	Description	Dimensions (ft) (approx)	Roof Cover (sq ft) (approx)
15	Unidentified bldg	300 x 70	22,750
16	Assembly bldg	740 x 390	290,550
17	Poss power station	100 x 105	13,125
18	Prob storage bldg	280 x 35	9,800
19	Assembly & processing bldg, irregular shape	600 x 550	330,000
20	Shop bldg	1,280 x 390	499,200
21	Assembly bldg, with high bay (75 ft)	1,200 x 460 150 x 140	561,200 24,500
22	Prob machine shop, irregular shape	1,000 x 435 150 x 55	448,050 9,350
23	Admin bldg	400 x 100	40,000
24	Restaurant	350 x 60	21,000
25	Assembly bldg, irregular shape	350 x 200	70,000
26	Assembly bldg	200 x 70	15,400
27	Forge bldg, U-shaped	850 x 600	510,000
28	Assembly bldg	850 x 460	400,200
29	Assembly bldg, with high bay	100 x 105	15,750
30	Foundry bldg	300 x 220	70,400
31	Engineering bldg (hollow square), with poss test tower 150 ft high	300 x 130	47,450
32	Shop bldg, 4 story	300 x 240	74,400
33	Poss test bldg, irregular shape, with high bay	200 x 245 150 x 55 100 x 100 100 x 40	64,925 8,525 10,500 5,000
34	Admin bldg, 7 story		30,450
35	Shop bldg, U-shaped	600 x 300	180,000
36	Power plant, 2 story, and poss boiler house, L-shaped	 500 x 125	72,000 63,125
37	Storage bldg		27,200
38	Prob engineering bldgs (4)		34,800 26,400
39	Boiler house		4,325
40	Unidentified bldg	100 x 60	6,300
41	Unidentified bldg		15,900
42	Poss engineering bldg	350 x 80	28,000
43	Poss power plant		15,400
			5,253,800

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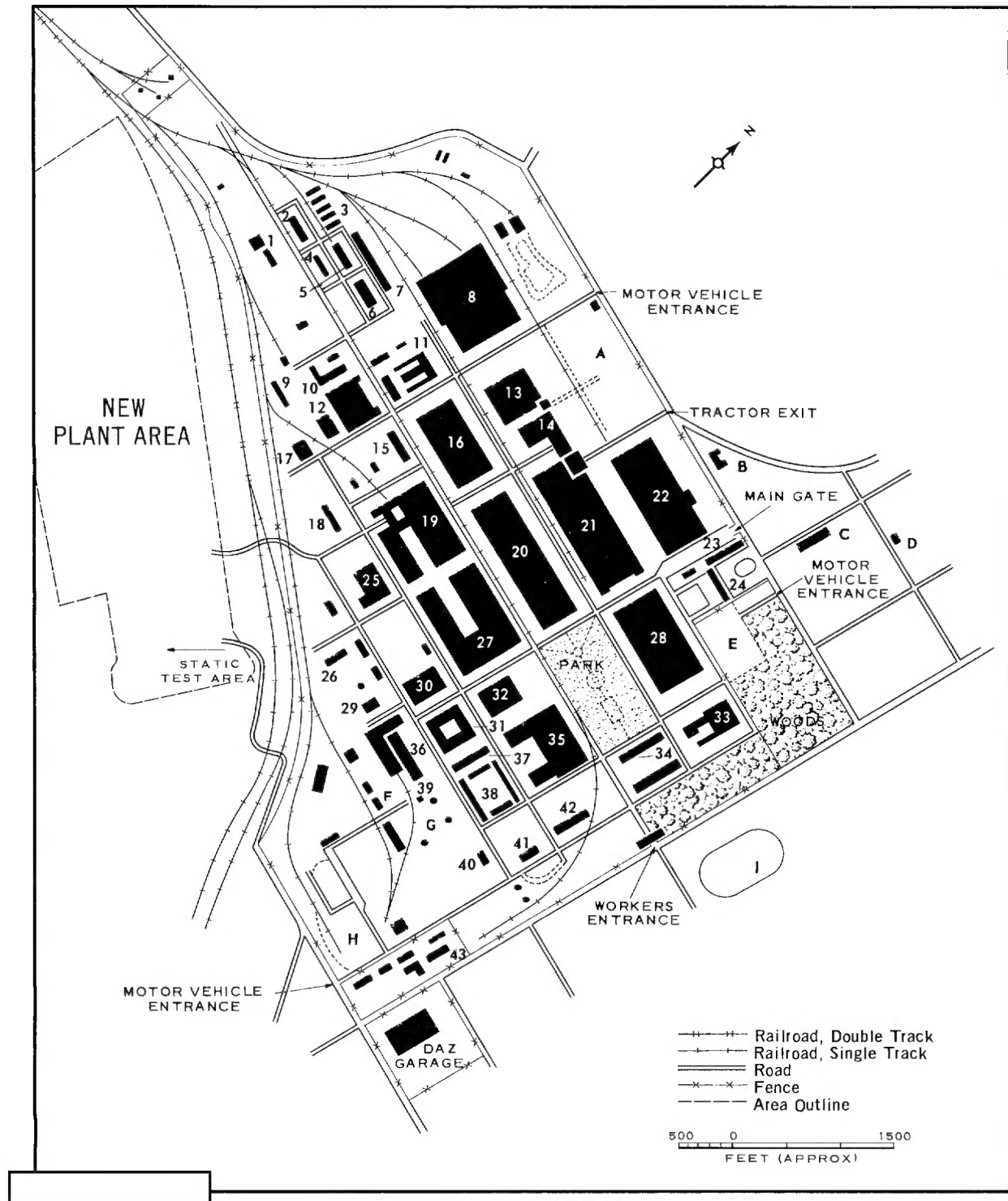


FIGURE 3. MAIN PLANT AREA.

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NEW PLANT AREA

The New Plant Area (Figure 4), designated as Plant Post Box 192, has an area of approximately 155 acres and its major buildings (Table 2) have a total roof cover of about 1,434,475 square feet. Adjoining the Main Plant Area on the southwest, and actually an expansion of it, the New Plant Area is often mistaken for the [redacted] tire and rubber plant 2 nm

to the south. An assembly building measuring 1,335 by 530 feet, with a rail-served high-bay section on its northern side, is the largest structure in the New Plant Area; the rail spur at the

Table 2. Major Buildings, New Plant Area

Item, Figure 4	Description	Dimensions (ft) (approx)	Roof Cover (sq ft) (approx)
1	Fire station	250 x 240	60,000
2	Guard bldg, T-shaped	170 x 60	10,200
3	Admin bldg	110 x 60	6,600
4	Unidentified bldg	220 x 85	18,700
5	Shop bldg	225 x 70	15,750
6	Shop bldg	520 x 125	65,000
7	Shop bldg	620 x 100	62,000
8	Assembly bldg with high bay	1,335 x 530	704,200
9	Assembly bldg	450 x 105	47,250
10	Garage	535 x 135	72,225
11	Prob storage bldg	250 x 90	22,500
12	Unidentified bldg	105 x 85	8,925
13	Prob storage bldg	220 x 120	26,400
14	Storage bldg	395 x 155	61,225
15	Prob storage bldg	220 x 110	24,200
16	Unidentified bldg	175 x 130	22,750
17	Unidentified bldg	170 x 85	14,450
18	Assembly bldg	560 x 140	78,400
19	Prob storage bldg	180 x 90	16,200
20	Assembly bldg	140 x 125	17,500

1,434,475

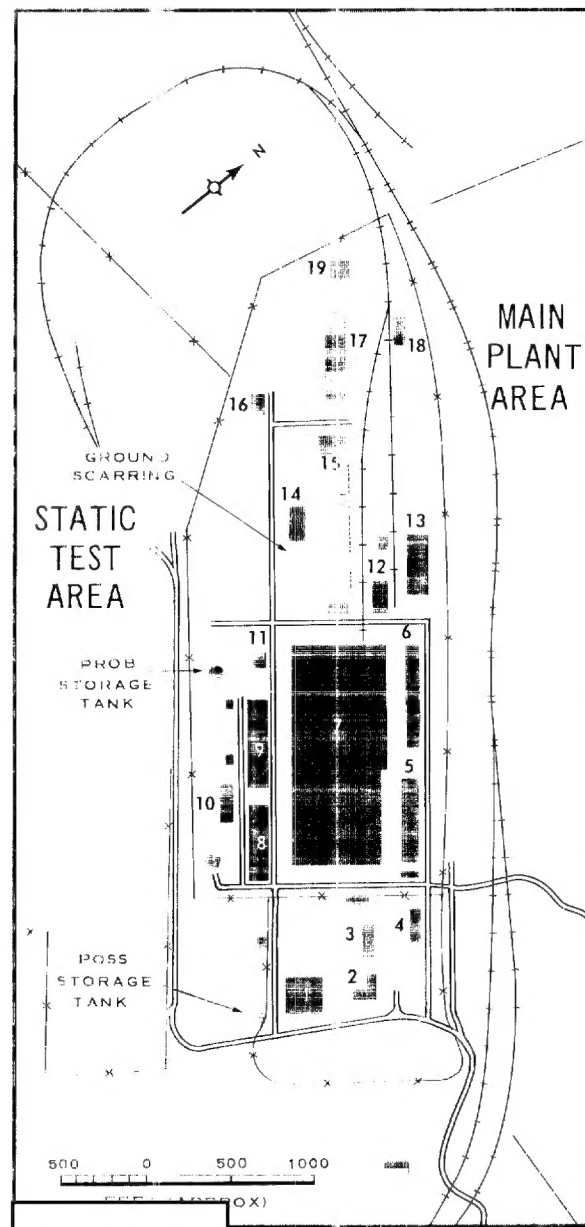


FIGURE 4. NEW PLANT AREA.

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northwest end of the high-bay section does not pass through the building, but does connect with a single-track spur serving the Static Test Area. A separately fenced administrative area measuring 1,040 by 980 feet is located at the northeast end of the New Plant Area. The administrative

area contains four buildings with a total roof cover of 111,250 square feet, and several smaller unidentified buildings. Road access to the New Plant Area is effected through the administrative area.

STATIC TEST AREA

The Static Test Area (Figure 5), which contains three large vertical stands for testing liquid propellant, is located west of the New Plant Area. It has an area of approximately 270 acres and its major buildings (Table 3) have a total roof cover of about 176,650 square feet. Included within the test area are a probable fabrication/shipping building, assembly/check-out buildings, a possible LOX plant, a number of liquid storage tanks, and various storage buildings and other support facilities. The probable fabrication/shipping building is served by a single-track rail spur, which connects with spurs serving the Main Plant Area and the New Plant Area. The possible LOX plant at the southeast end of the Static Test Area is secured by a separate fence and contains nine buildings, the largest of which measures about 200 by 60 feet (Figure 5, Item 11). The only road access to the test area and the possible LOX plant (35 to 40 feet wide and probably paved) passes through the New Plant Area from the Main Plant Area. Roads inside the Static Test Area average about 25 feet in width and are probably concrete surfaced; the maximum turning radius is 110 feet.

Test Stands A and B (Figure 5, Items A & B), situated on the edge of a ravine 50 to 75 feet deep, are approximately 1,850 and 2,460 feet northwest of the possible LOX plant. Paved blast deflectors extend from the bases of the stands to the bottom of the ravine. Parking for vehicles and other ground support equipment is provided by paved

areas adjacent to the stands. Test Stand C (Figure 5, Item C) is situated on level ground about 1,500 feet northwest of Test Stand B. A sloping trough-like excavation in front of the stand appears to be equipped with piping and collection or drainage devices, possibly for flushing propellants or the deflection and evaporation of materials such as flourine. Probable observation bunkers (Figure 5, Item D) are situated on the south side of the ravine opposite Test Stands A and B. A semiburied tank (Figure 5, Item E) near Test Stand C measures approximately 90 feet in diameter. The number of bays in the test stands cannot be determined and there is no evidence of additional stands under construction. Dimensions of the test stands are as follows:

Test Stand A - length 100 ft, width 70 ft, height 85 ft, overall height 140 ft; blast deflector excavation 375 by 80 ft, depth undetermined

Test Stand B - length 100 ft, width 70 ft, height 70 ft, overall height 140 ft; blast deflector excavation 160 by 85 ft, depth undetermined

Test Stand C - length 150 ft, width 70 ft, height 65 ft, overall height 140 ft; blast deflector excavation 150 by 90 ft, depth undetermined

Test Stand A is comparable in size to the largest stands at the Krasnozavodsk test complex near Zagorsk; Test Stand B resembles the stand at

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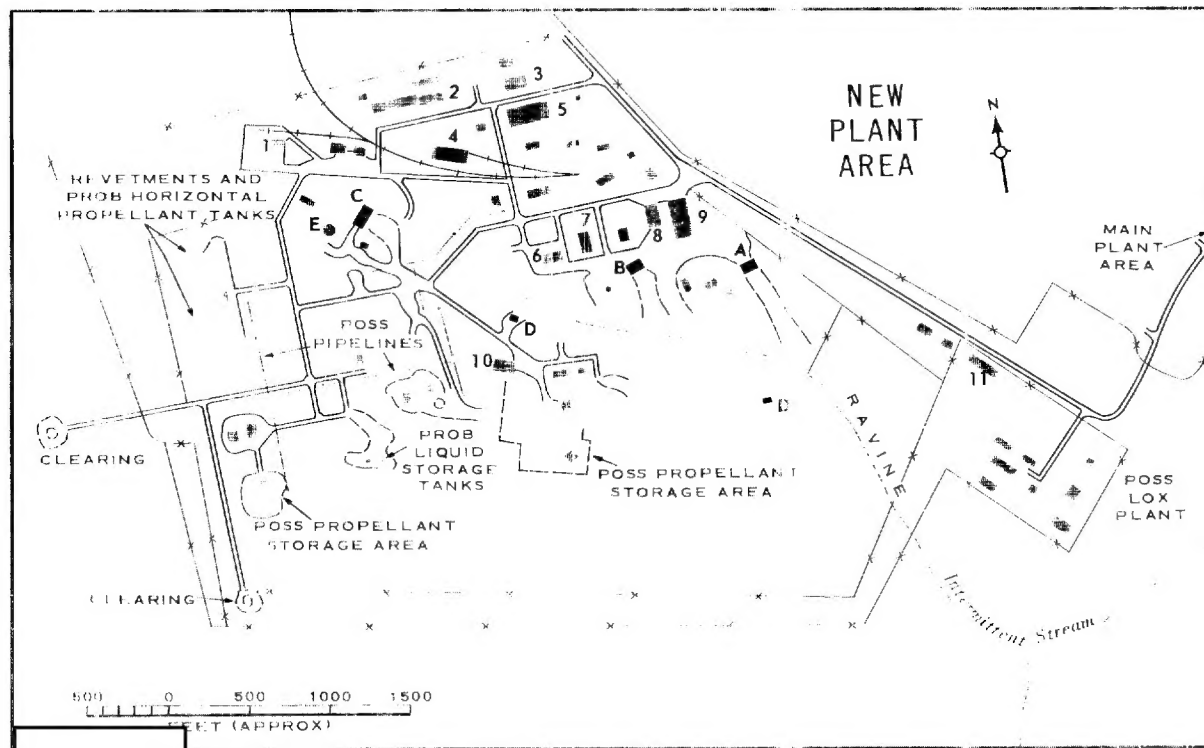


FIGURE 5. STATIC TEST AREA.

Table 3. Major Buildings, Static Test Area

Item, Figure 5	Description	Dimensions (ft) (approx)	Roof Cover (sq ft) (approx)
1	Prob storage bldg	70 x 65	4,550
2	Service bldgs. (2), connected	135 x 85 240 x 70	13,175 16,800
3	Prob storage bldg	135 x 85	11,475
4	Prob fabrication shipping bldg	220 x 85	18,700
5	Shop bldg	265 x 110	29,150
6	Shop bldg	140 x 70	9,800
7	Shop bldg	140 x 70	9,800
8	Prob fabrication bldg	170 x 85	14,450
9	Prob assembly, checkout bldg	250 x 105	26,250
10	Unidentified bldg	140 x 75	10,500
11	Prob storage bldg	200 x 60	12,000
			176,650

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Kurumoch; and the blast deflector excavation at Test Stand C is similar to the possible test facilities at Voronezh.

Two probable horizontal propellant storage tanks, 100 feet long and 20 feet in diameter, are situated in earthen revetments measuring 280 by 75 feet at the northwest extremity of the Static Test Area. A vertical storage tank 60 feet in diameter and four small buildings or possible

horizontal liquid storage tanks are located south of the revetted tanks. Possible pipelines extend from all these tanks to the test stands. Other possible liquid propellant storage facilities include two vertical tanks and an area containing several buildings, about 1,450 feet south and 1,750 feet southeast, respectively, of Test Stand C.

CONCLUSIONS

The proximity and interrelationship of the plant and testing areas indicate that the installation is probably engaged in both missile production and R&D programs. It is also apparently closely associated with the OKB/Plant 456 at Khimki near Moscow. 1/ 2/

The addition of the New Plant Area and the Static Test Area has more than doubled the

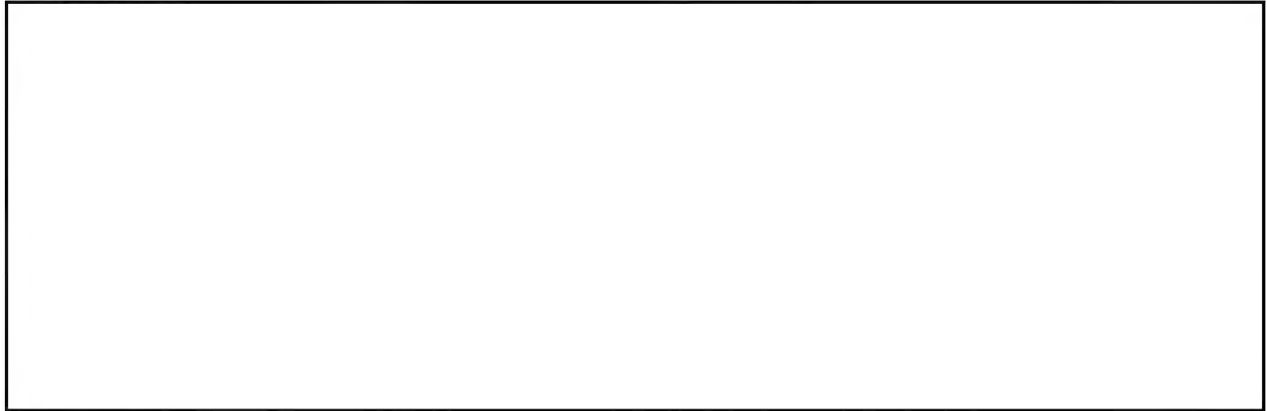
acreage and building count at the installation since 1945. The possible LOX plant and large vertical test stands, with related storage and support facilities, suggest that high-thrust rocket engines using liquid oxygen are tested. The production of propellants may involve chemicals and processes utilized at the tire and rubber plant south of the New Plant Area.

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REQUIREMENT

CIA DDLRR E/R 29/62

NPIC PROJECT

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Approved For Release 2003/06/20 : CIA-RDP78B04560A000600010008-4

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